

1. An elliptical exercise apparatus comprising:

a frame;

first and second foot supports, wherein each of said first and second foot supports comprises means for flexibly deflecting force applied by a user operating the elliptical exercise apparatus; and

means coupled to the frame and the foot supports for enabling elliptical movement of the first and second foot supports.

2. An elliptical exercise apparatus as defined in claim 1, wherein means for flexibly deflecting force by a user comprises a leaf spring.

3. An elliptical exercise apparatus as defined in claim 1, wherein the material composition of the leaf spring comprises at least one of plastic, fiberglass, wood, and metal.

4. An elliptical exercise apparatus as defined in claim 1, wherein means for enabling elliptical movement comprises a crank, and wherein said crank is pivotally connected to said frame and said first and second foot supports.

5. An elliptical exercise apparatus as defined in claim 1, further comprising means for elevating said first and second foot supports.

6. An elliptical exercise apparatus as defined in claim 5, wherein the means for elevating said first and second foot supports comprises sloped guide tracks fixedly attached

to the frame, and wherein said first and second foot supports are configured with rollers for rolling on said sloped guide tracks.

7. An elliptical exercise apparatus as defined in claim 1, further comprising means for supporting a user's arms.

8. An elliptical exercise apparatus as defined in claim 7, wherein the means for supporting a user's arms comprises a first pole and a second pole, and wherein the first pole is pivotally connected to both the frame and the first foot support and the second pole is pivotally connected to both the frame and the second foot support.

9. An elliptical exercise apparatus as defined in claim 1, wherein the means for flexibly deflecting force comprises a flexibly resilient member.

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10. An elliptical exercise apparatus comprising:

a frame;

first and second foot supports, wherein each of said first and second foot supports comprises a flexibly resilient member, and wherein said flexibly resilient member is configured to flexibly displace force applied by a user operating the elliptical exercise apparatus; and

a crank coupled to the frame and the first and second foot supports, wherein said crank is pivotally connected to each of said first and second foot supports.

11. An elliptical exercise apparatus as defined in claim 10, further comprising first and second guide tracks, and wherein said first and second foot supports are mounted on said first and second guide tracks respectively;

12. An elliptical exercise apparatus as defined in claim 10, wherein said first and second guide tracks are fixedly attached to the frame on a sloped incline.

13. An elliptical exercise apparatus as defined in claim 12, wherein said first and second foot supports are rollably mounted on said first and second guide tracks respectively.

14. An elliptical exercise apparatus as defined in claim 10, wherein each of said first and second foot supports further comprises a foot engagement pad configured to receive the foot of a user.

15. An elliptical exercise apparatus as defined in claim 10, further comprising at least one arm support, wherein said at least one arm support is pivotally attached to the frame.

16. An elliptical exercise apparatus as defined in claim 15, wherein said at least one arm support is pivotally attached to one of either the first and second foot supports.

17. An elliptical exercise apparatus as defined in claim 10<sup>14</sup>, wherein said foot engagement pads of the said first and second foot supports rotate about substantially elliptical paths.

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18. An elliptical exercise apparatus comprising:

a frame;

first and second foot supports, wherein each of said first and second foot supports comprises a flexibly resilient leaf spring and a foot engagement pad configured to receive the foot of a user;

first and second guide tracks fixedly attached to the frame on an incline, wherein a first end of each of said first and second foot supports is rollably mounted on said first and second guide tracks respectively;

at least one arm support, wherein said at least one arm support is pivotally attached to both the frame and to the first end of either the first or second foot supports; and

a crank, wherein said crank is pivotally connected to a second end of each of the first and second foot supports.

19. An elliptical exercise apparatus as defined in claim 18, further comprising a second arm support.

20. An elliptical exercise apparatus as defined in claim 19, wherein each arm support comprises a larger diameter pole and a smaller diameter pole, and wherein the smaller diameter pole is slidably retractable into the larger diameter pole.

21. An elliptical exercise apparatus as defined in claim 18, wherein the leaf spring of each of the first and second foot supports is configured to flex in response to an application of force by the user, and wherein the first end of each of said first and second foot supports is at least partially displaced rollably along said first and second guide tracks, respectively, when the leaf springs of the first and second foot supports are flexed.

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